QUALITY ASSURANCE/ QUALITY CONTROL REPORT

AEE/QA/PR/ /2023-24, DATE:		
Name of Work	:	Construction of Roads and Drains in Chikkasandra and AGB Layout in ward no. 17. Estimated Cost: 100.00 Lakhs.
Job Code	:	017-23-000002
Bill No & Amount	:	1st and Final Bill Rs. 92,11,552.26.
Name of the agency	:	Sri. Byadigere Honnesh Shivakumar.
Type of Test Performed	:	1. Bitumen Content and Gradation Test as per MORTH V Revision
Materials on which Tests Was Performed	:	1. Bituminous Concrete. 2. Bituminous Macadam.
Officers present during inspection	:	1. Sri. Krishnamurthy, AEE-Shettyhalli Sub Div. 2. Sri. Ravinandhan R, EE-Quality Assurance. 3. Sri. S V Malagavi, AEE–Quality Assurance.
Project Management Consultants	:	**M/s CIVIL AIM CONSULTANTS AND ENGINEERS, BANGALORE.**
Observations	:	• Bitumen Content and Gradation test was conducted by Project Management Consultants at 05 locations and Core Cut Sample of BM& BC was collected in presence of AEE- Shettyhalli Sub Div, EE-QA and AEE-QA. • Bitumen Content and Gradation Test for Core Cut Sample of BC and BM is recorded by the PMC consultants. • The location wise test results furnished by PMC to BBMP QA department are reproduced in the tables shown below.
Test Locations	:	**Location 1:** #1028, Kanasu, DEH7924, 10th Main, AGB Layout. **Location 2:** #766, Nammane, 4th Cross, AGB Layout. **Location 3:** #969, 3rd Cross, 11th main, Venkatadri, AGB Layout. **Location 4:** Appa, 840, 11th Main, AGB Layout. **Location 5:** #788, 11th A Main, AGB Layout.

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Table-01: Bitumen Content Determination Test Results for BM.

Tested Location at:
Location 1: #1028, Kanasu, DEH7924, 10th Main, AGB Layout.
Location 2: #766, Nammane, 4th Cross, AGB Layout.
Location 3: #969, 3rd Cross, 11th main, Venkatadri, AGB Layout.
Location 4: Appa, 840, 11th Main, AGB Layout.
Location 5: #788, 11th A Main, AGB Layout.

Description	Trail1	Trail2	Trail3	Trail4	Trail5
1.Initial weight of sample (gms) W1	510	505	505	515	505
2.Initial weight of Filter Paper (gms) W2	493	487.58	488	497.5	487.8
3.Final weight of sample (gms) W3	-	-	-	-	.
4.Final weight of Filter Paper (gms) W4	-	-	-	-	-
5.Weight of Finess (gms) W5= (W4- W2)	-	-	-	-	-
6.Weight of Bitumen W6= W1-(w3+W5)	17	17.42	17	17.50	17.2
7. Bitumen content in %	3.33	3.45	3.37	3.40	3.41

(Location -01)

SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
26.50	0	0	0	100	100
19.00	33.4	6.77	6.77	93.23	90-100
13.20	171.6	34.81	41.58	58.42	56-88
4.75	154.9	31.42	73.00	27.00	16-36
2.36	55.9	11.34	84.34	15.66	4-19
0.300	36.4	7.38	91.72	8.28	2-10
0.075	8.2	1.66	93.39	6.61	0-8

(Location -02)

SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
26.50	0	0	0	100	100
19.00	31.9	6.54	6.54	93.46	90-100
13.20	145.6	29.86	36.40	63.60	56-88
4.75	186.2	38.19	74.59	25.41	16-36
2.36	78.6	16.12	90.71	9.29	4-19
0.300	26.5	5.44	96.15	3.85	2-10
0.075	11.5	2.36	98.51	1.49	0-8

(Location -03)

SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
26.50	0	0	0	100	100
19.00	33.9	6.95	6.95	93.05	90-100
13.20	171.6	35.16	42.11	57.89	56-88
4.75	154.9	31.74	73.85	26.15	16-36
2.36	55.9	11.45	85.31	14.69	4-19
0.300	36.4	7.46	92.77	7.23	2-10
0.075	8.2	1.68	94.45	5.55	0-8

(Location -04)

SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
26.50	0	0	0	100	100
19.00	31.6	6.35	6.35	93.65	90-100
13.20	145.6	29.27	35.62	64.38	56-88
4.75	186.2	37.43	73.05	26.95	16-36
2.36	78.6	15.80	88.84	11.16	4-19
0.300	26.5	5.33	94.17	5.83	2-10
0.075	11.5	2.31	96.48	3.52	0-8

(Location -05)

SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
26.50	0	0	0	100	100
19.00	33.9	6.95	6.95	93.05	90-100
13.20	171.6	35.18	42.13	57.87	56-88
4.75	154.9	31.75	73.88	26.12	16-36
2.36	55.9	11.46	85.34	14.66	4-19
0.300	36.4	7.46	92.80	7.20	2-10
0.075	8.2	1.68	94.49	5.51	0-8

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Table-02: Bitumen Content Determination Test Results for BC.

Tested Location at:
Location 1: #1028, Kanasu, DEH7924, 10th Main, AGB Layout.
Location 2: #766, Nammane, 4th Cross, AGB Layout.
Location 3: #969, 3rd Cross, 11th main, Venkatadri, AGB Layout.
Location 4: Appa, 840, 11th Main, AGB Layout.
Location 5: #788, 11th A Main, AGB Layout.

Description	Trail1	Trail2	Trail3	Trail4	Trail5
1.Initial weight of sample (gms) W1	500	500	510	520	510
2.Initial weight of Filter Paper (gms) W2	473.3	472.83	482.82	492	482.64
3.Final weight of sample (gms) W3	26.7	27.17	27.18	28	27.36
4.Final weight of Filter Paper (gms) W4	-	-	-	-	-
5.Weight of Finess (gms) W5= (W4- W2)	-	-	-	-	-
6.Weight of Bitumen W6= W1-(w3+W5)	26.7	27.17	27.18	28	27.36
7. Bitumen content in %	5.34	5.43	5.33	5.38	5.36

(Location -01)

SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
19	0	0	0	100	100
13.2	12.5	12.5	2.6	97.4	79 - 100
9.5	53.3	65.8	13.9	86.1	70 - 88
4.75	96.6	162.4	34.3	65.7	53 - 71
2.36	45.5	207.9	43.9	56.1	42 - 58
1.18	43.3	251.2	53.1	46.9	34 - 48
0.600	47.8	299	63.2	36.8	26 - 38
0.300	55.2	354.2	74.8	25.2	18 - 28
0.150	34.6	388.8	82.1	17.9	12 - 20
0.075	51.1	439.9	92.9	7.1	4 - 10

(Location-02)

SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
19	0	0	0	100	100
13.2	15.1	15.1	3.2	96.8	79 - 100
9.5	62.5	77.6	16.4	83.6	70 - 88
4.75	96.4	174	36.8	63.2	53 - 71
2.36	45.4	219.4	46.4	53.6	42 - 58
1.18	52.6	272	57.5	42.5	34 - 48
0.600	52.4	324.4	68.6	31.4	26 - 38
0.300	45.9	370.3	78.3	21.7	18 - 28
0.150	25.4	395.7	83.7	16.3	12 - 20
0.075	46.3	442	93.5	6.5	4 - 10

(Location-03)

SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
19	0	0	0	100	100
13.2	12.5	12.5	2.6	97.4	79 - 100
9.5	53.3	65.8	13.6	86.4	70 - 88
4.75	96.6	162.4	33.6	66.4	53 - 71
2.36	45.5	207.9	43.1	56.9	42 - 58
1.18	43.3	251.2	52.0	48.0	34 - 48
0.600	47.8	299	61.9	38.1	26 - 38
0.300	55.2	354.2	73.4	26.6	18 - 28
0.150	34.6	388.8	80.5	19.5	12 - 20
0.075	51.1	439.9	91.1	8.9	4 - 10

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(Location-04)					
SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
19	0	0	0	100	100
13.2	15.6	15.6	3.2	96.8	79 - 100
9.5	62.5	78.1	15.9	84.1	70 - 88
4.75	96.4	174.5	35.5	64.5	53 - 71
2.36	45.4	219.9	44.7	55.3	42 - 58
1.18	52.6	272.5	55.4	44.6	34 - 48
0.600	52.4	324.9	66.0	34.0	26 - 38
0.300	45.9	370.8	75.4	24.6	18 - 28
0.150	25.4	396.2	80.5	19.5	12 - 20
0.075	46.3	442.5	89.9	10.1	4 - 10
(Location -05)					
SIEVE SIZE, mm	Weight Retained, gms	Cumulative Retained In gms	Cumulative % Retained	Cumulative % Passing	Grade-II As per MORTH
19	0	0	0	100	100
13.2	12.5	12.5	2.6	97.4	79 - 100
9.5	53.3	65.8	13.6	86.4	70 - 88
4.75	96.6	162.4	33.6	66.4	53 - 71
2.36	45.5	207.9	43.1	56.9	42 - 58
1.18	43.3	251.2	52.0	48.0	34 - 48
0.600	47.8	299	62.0	38.0	26 - 38
0.300	55.2	354.2	73.4	26.6	18 - 28
0.150	34.6	388.8	80.6	19.4	12 - 20
0.075	51.1	439.9	91.1	8.9	4 - 10

Conclusion:

The file containing 1st & final bill has been submitted above work to QA Department on 26/07/2023. Engineers of QA/QC division have visited the work spot on 04/08/2023.

During the Inspection it was observed that the items provided in estimate have been executed by the contractor. PMC team was instructed to assess strength of BC and BM by conducting Bitumen Content and Gradation Test. The Core Cut Test was conducted by PMC in presence of engineer in charge of work.

From the test results furnished by PMC consultants, it is concluded that the results of the samples collected are in accordance with the standards/ specifications mention in the IRC, BIS codes. However, the results submitted by the PMC have been reproduced here with for further needful action. The results checked by QA/QC relates only for item tested in the particular location randomly.

Further, QA/QC directs the PMC and Engineer in-charge of the work that all materials used for the work shall be inspected, tested and accepted as per the relevant specifications before incorporation in the work. The frequencies and methods of sampling and testing materials, including those required for definite purpose and not covered by MORTH specifications shall be in accordance to the relevant IRC or BIS or AASHTO/ASTM/BS standards in order of priority.

All materials or work not conforming to the requirements of the specifications shall be considered unacceptable and rejected. The unacceptable materials or works that are rejected shall be immediately removed unless the defects are corrected and approved by the engineer in-charge of work.

Engineer In-charge of work shall ensure that work executed as per this bill is not claimed in any other bill/work or else engineer In-charge shall be responsible.

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Engineer In-charge of work shall updated road history details of the road taken up in this work.

The concerned Engineer in charge of the work shall follow the direction issued by Chief Commissioner Letter number dated 01.08.2022 and 14.09.2022 and take necessary action as appropriate in accordance with the law.

Note: -

I. This report by QA/QC is pertaining to the work carried out in 1st & final bill only.
II. Safety precautions shall be taken at work spot to prevent any mishap, injuries or loss of life to general public and construction workers according to guidelines laid down in code of practices.
III. Engineer in charge of work shall obtain requisite approval and Implement traffic management plan prior to commencement of work.
IV. Engineer in Charge of work any Changes in the estimate approval should be taken from competent authority.
V. Engineer in charge of work shall display details of work, work code, cost of project, start and completion date, and information of Engineer in charge of work with contact numbers at work spot.
VI. Engineer in charge of work and Agency shall ensure that if any damages or defects occur pertaining to the executed work within the Defect Liability period (DLP) as per agreement the same shall be rectified immediately on top priority without fail.
VII. The amount claimed for work slip /EIRL items shall be released to contractor upon obtaining approval from competent authority.

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Location 1: #1028, Kanasu, DEH7924, 10th Main, AGB Layout.

Location 2: #766, Nammane, 4th Cross, AGB Layout.

Location 3: #969, 3rd Cross, 11th main, Venkatadri, AGB Layout.

GPS Map Camera
Bengaluru,KA,India
11th B Main Road, Chikkasandra, Bengaluru,
560090, KA, India
Lat 13.068392, Long 77.506150
08/04/2023 01:02 PM GMT+05:30
Note : Captured by GPS Map Camera

GPS Map Camera
Bengaluru,KA,India
11th B Main Road, Chikkasandra, Bengaluru,
560090, KA, India
Lat 13.068576, Long 77.506481
08/04/2023 01:14 PM GMT+05:30
Note : Captured by GPS Map Camera

Location 4: Appa, 840, 11th Main, AGB Layout.

GPS Map Camera
Bengaluru,KA,India
11th B Main Road, Chikkasandra, Bengaluru,
560090, KA, India
Lat 13.068183, Long 77.505529
08/04/2023 12:41 PM GMT+05:30
Note : Captured by GPS Map Camera

GPS Map Camera
Bengaluru,KA,India
11th B Main Road, Chikkasandra, Bengaluru,
560090, KA, India
Lat 13.068578, Long 77.506476
08/04/2023 01:14 PM GMT+05:30
Note : Captured by GPS Map Camera